# Dental Furnace: The Key to Success of Modern Dental Laboratory

For anyone who has worked in a dental laboratory, it is clear that the quality of crowns, bridges or other ceramic restorations is influenced not only by the way they were designed but mostly by the firing process. The **dental furnace** is an equipment used in the last and most critical stage of the manufacturing and any mistake made during the process requires a patient to wait several weeks to redo the restoration. At our company, Bionics Scientific, we have worked long enough with dental technicians to know that this machine determines the efficiency of the laboratory.

## What Is a Dental Furnace

The dental furnace is a special type of high-temperature equipment that is designed to fire, press, sinter or glaze dental ceramics and zirconia restorations. Unlike a general laboratory furnace, it is calibrated according to the unique thermal characteristics of dental materials, shrinking, densifying and changing their color due to the accuracy of temperature and vacuum control in each firing process. Regardless of whether it is a sintering dental furnace that solidifies a crown into its ultimate strength or porcelain furnace applying layers of glaze, the precision should be measured in terms of single digits of temperature.

## Why Is Precision Important for Dental Laboratories more than Almost Everywhere Else

In contrast to general laboratories, dental laboratories deal with restorations that will remain in a person's mouth for years and decades. Any imprecision in work of ceramic firing furnace leads to micro-cracking, shade mismatching or weakening of flexural strength making the life time of restorations shorter. For this reason, the precise heating profile, vacuum firing system and reliable thermocouple are not luxury elements but necessary features of dental furnaces. Moreover, labs with reliable equipment report fewer remakes.

## Types of Dental Furnaces Used in Modern Dental Laboratories

Modern dental laboratories use different kinds of equipment, rather than just one. Zirconia furnace helps conduct the long and difficult cycle of high temperature sintering of zirconia blocks producing zirconia restorations. Porcelain furnace helps regulate the process of glazing and staining at lower temperatures producing translucent and natural restoration finish. The press furnace is used for creating pressable ceramics – a technology which utilizes pressure and temperature for creating the restoration with ideal margin.

## Choosing the Dental Furnace to Suit Your Laboratory

The chamber capacity, temperature control capability, efficiency of the vacuum pump, and whether the furnace can be pre-programmed for different firings must be taken into account when selecting a **dental furnace**. If a dental ceramic furnace has a bad vacuum pump, it will form bubbles on the restorations, ruining your lab's reputation. Here at Bionics Scientific we specialize in offering dental furnace technology that is accurate and easy to operate, allowing dental technicians to concentrate on restorations without having any extra difficulties.

## Maintenance to Protect Your Investment

Proper calibration, careful cleaning of the firing chamber, and regular replacement of heating elements will contribute greatly to extending the life span of your dental furnace. Ignoring these maintenance procedures will reflect in an unreliable shading or shrinkage of restorations within a few months.

## Conclusion

Even though a **dental furnace** is pretty quiet and doesn't attract attention in the dental laboratory, its accuracy will impact the final result and reputation of your lab. Buying reliable and properly maintaining dental furnaces is always a good investment for a dental lab.